

Recommended Core Undergraduate Public Health Curricula Public Health 101, Epidemiology 101, and Global Health 101

The following draft curriculum frameworks are tools that can assist faculty in developing each of the core courses.

Public Health 101

I. Overview and Basic Principles

- Context and scope of public health, including history, philosophy, literature, essential services, ethics, and applications to current events — Public health placed in historical and modern perspective.
- Public health as cross-cutting and systematic — Interdisciplinary concepts introduced early and integrated throughout the course (e.g., examining the options for interventions to address public health concerns).
- Epidemiologic principles and population perspective — Rates, risk factors, and health status indicators of morbidity and mortality; disease determinants, causation, and types of epidemiologic research; and public health surveillance and vital statistics.

II. Population Health Tools

- Health communication and informatics — Accessing and evaluating the quality of health information and data in the mass media, including the Internet.
- Health and social and behavioral sciences — Impact on health and methods for altering behaviors at the individual and population levels.
- Health policy, law, and ethics — Tools for implementing health decisions and potential tensions between individual rights and social responsibilities.

III. Morbidity and Mortality: Determinants, Burdens, and Interventions

- Environmental and occupational health and safety — Impact and control on health status.
- Communicable diseases — Prevention, detection, and control from a population perspective.
- Noncommunicable diseases, unintentional injuries, and violence — Effects on longevity and quality of life and methods to prevent, detect, cure, and minimize. Concepts of society's epidemiological and demographic transitions

IV. Health-Care and Public Health Systems

- Health workforce — Professionals' roles and options within the health care and public health workforce.
- Organization of health care and public health systems — Institutions and structures of health care and public health systems, both national and international; the distinct roles and complementary responsibilities of health care and public health systems; and the mechanisms, including insurance systems, for paying for health services.
- Costs, quality, and access to health-care and public health services — Reasons for health-care costs, criteria for quality, and effects of inadequate access.

V. Special Public Health Education Focus Areas

- Health disparities and vulnerable populations — Overview of public health's commitment to vulnerable populations, including maternal and child care, aging, persons with disabilities, and socioeconomically disadvantaged populations.
- Public health preparedness and disaster management — Essential roles of public health in preparedness for and response to natural or terrorism-related disasters.

Epidemiology 101

I. History, Philosophy, and Uses of Epidemiology

- Historical contributions and modern uses of epidemiology — Development of epidemiologic thinking and placement of epidemiology in historical and modern perspective.
- Ethics and philosophy of epidemiology — Appreciation of the links between epidemiology and broader ethical and philosophic traditions and concerns.

II. Descriptive Epidemiology

- Condition, frequency, and severity — The basic tools of epidemiologic analysis, including case definitions and populations, incidence, prevalence, and case-fatality rates.
- Data regarding disease or injuries — Vital statistics, public health surveillance, and measures of health status, including methods for describing quantitatively the natural history, frequency, and changes in infectious and chronic diseases and injuries.
- Patterns of disease and injuries — Application of the basic tools of epidemiology to generate hypotheses regarding person, place, and time; changes and differences in rates; exposures; incubation periods; and disease spread.

III. Association and Causation

- Estimation — Measures of strengths of association, graphical display of data, risk, relative risk/risk ratios, and attributable risk.
- Inference — Concepts of statistical significance and confidence intervals
- Bias, confounding, and adjustment — Identification of bias, confounding, and effect modification/interaction and methods to prevent and take into account their impact.
- Causation — Risk factors and other determinants of diseases and conditions.

IV. Analytic Epidemiology

- Basic epidemiologic study designs and their application to population health including: ecologic or population comparison, cross-sectional, case-control, and retrospective and prospective cohort.
- Experimental studies — Randomized clinical trials and community trials and their applications to the efficacy and effectiveness of disease or injury etiology and the efficacy and effectiveness of interventions

V. Evidence-Based Public Health and Evidence-Based Recommendations

- Harm, benefit, and cost analyses — Evidence-based decision analysis regarding risks, benefits, and cost-effectiveness of interventions.
- Intervention efficacy and effectiveness — Evidence-based analyses of interventions' capacity for producing desired results and measurement of the accuracy or success of prevention and control efforts for diseases or injuries.

VI. Applications to Policy and Basic and Clinical Sciences

- Outbreak investigation, testing, and screening — Application of epidemiologic methods and basic and clinical science.
- Public health policy — Application of results from investigations and analyses to influence policymaking.
- Special epidemiologic applications — Molecular and genetic epidemiology, environmental and occupational health and safety, unintentional injury and violence prevention, and behavioral sciences.

Global Health 101

I. Basic Principles of Global Health

Basic frameworks for understanding global health issues and the improvement of health at a population level:

1. **Measuring Health**
Measures of health status such as mortality of children under 5, life-expectancy, and health adjusted life expectancy (HALEs)
2. **Determinants of Health**
Demographic and epidemiological transitions as well as the biological, behavioral, environmental, geographical, medical and socio-economic determinants of health
3. **Health and Socio-Economic Development**
The health and development link, equity and social justice, and the principles of cost-effectiveness analysis in health.

II. Health and Society

Cross-cutting issues underlying the strategies and organization for delivery of health care and population health services:

1. **Human Rights, Ethics and Global Health**
Basic principles of human rights and research ethics, and ethical decision making, related to global health
2. **Healthcare and Public Health Systems**
The organization and functions of health systems in developing and developed countries including connections between healthcare and public health, comparative health care systems, and critical health system challenges.
3. **Culture and Health**
Cultural factors influencing the structure and function of healthcare and public health systems as well as individual health behaviors, choices of interventions, and utilization of services

III. The Burden of Morbidity and Mortality

Approaches to reducing morbidity and mortality including measuring the burden of diseases and other conditions; identification of risk factors; and evidence-based identification of cost-effective interventions to reduce morbidity and mortality. Understanding of the biological principles relevant to key conditions included in each of the areas below is essential.

1. **Environment**
2. **Nutrition**
3. **Gender and Health**

4. Child Health
5. Communicable Diseases
6. Non-Communicable Diseases
7. Unintentional and Intentional Injuries

IV. Global Cooperation for Health

Approaches to global cooperation to address health issues that cross national borders and/or require consistent multinational approaches for successful intervention

1. Disasters and Complex Humanitarian Emergencies
Issues of preparedness, emergency response, and post-disaster management
2. Science and Technological Innovation for Global Health
Global structures and incentives for encouraging innovative approaches to health problems and dissemination of innovation
3. Global Institutions and Global Cooperation
Current and potential structures for collaboration for improving health, including multi-national, bilateral, non-governmental organizations (NGOs), foundations, and public-private partnerships